

CLAIMS

WHAT IS CLAIMED IS:

1. An elevator shaft door disposed in a frame, the door comprising:
  - a) a plurality of parallel tracks disposed in the frame;
  - b) a plurality of rolling carriages comprising:
    - i) at least one rolling carriage for rolling in at least one of said plurality of parallel tracks; and
    - ii) at least one additional rolling carriage for rolling in at least one of said plurality of parallel tracks;
  - c) a plurality of panels comprising:
    - i) at least one panel which is suspended on said at least one rolling carriage;
    - ii) at least one additional panel which is suspended on said at least one additional rolling carriage;

d) at least one tension cable that is fixed in place, and has ends, wherein said tension cable ends are coupled to said at least one rolling carriage; and

e) a plurality of deflection rollers that are mounted to rotate on said at least one additional rolling carriage, wherein said deflection rollers are adapted to rotate around a vertical axes of rotation and each of said plurality of deflection rollers have a different diameter to form at least one smaller deflection roller and at least one larger deflection roller;

wherein said plurality of panels perform movements of different lengths, in a same direction during an opening and closing movement and move past each other with a changing overlap during said opening and closing movement on said plurality of parallel tracks, wherein ends of said tension cable are connected to a back end of said at least one rolling carriage oriented in the closing direction, wherein at least one end of said at least one tension cable becomes shorter during a closing movement of said at least one panel which moves ahead of 'said at least one additional panel during said closing movement, and wherein said at least one

end of said tension cable is guided around said at least one smaller deflection roller.

2. The elevator shaft door as in claim 1, wherein said at least one rolling carriage has a rolling wheel carrier that has rollers mounted on its upper end to at least one of said plurality of substantially parallel tracks, wherein said end of said at least one tension cable that is guided around said at least one smaller deflection roller is attached to a side of said rolling wheel carrier that faces said at least one additional rolling carriage, and wherein said at least one tension cable has another end that is guided around said at least one larger deflection roller, wherein said another end of said at least one tension cable is connected to a side of said rolling wheel carrier that faces opposite said at least one rolling carriage.

3. The elevator shaft door as in claim 2, wherein said at least one additional rolling carriage has a rolling wheel carrier that has rollers mounted on an upper end of said at least one additional panel, wherein said rolling wheel carrier has at least two additional horizontal surfaces on a front and a back end, based upon a closing direction, of said

plurality of panels wherein said at least one smaller deflection roller and said at least one larger deflection roller are each mounted on at least one of said at least two additional horizontal surfaces.

4. The elevator shaft as in claim 3, wherein said at least two horizontal surfaces each have a ridge which forms a reinforcement, wherein said ridge is positioned on a side facing away from said plurality of deflection rollers.

5. The elevator shaft door as in claim 2, wherein said at least one rolling wheel carrier coupled to said at least one rolling carriage comprises a shaped sheet metal profile.

6. The elevator shaft door as in claim 3, wherein said at least one rolling wheel carrier coupled to said at least one additional rolling carriage comprises a shaped sheet metal profile.

7. The elevator shaft as in claim 1, wherein said at least one deflection roller and said at least one additional deflection roller are aligned on two different vertical axes that have a parallel offset, wherein said parallel offset of

said two different vertical axes is adapted so that all segments of said at least one tension cable that are guided around said plurality of deflection rollers, extend parallel to a running direction of said plurality of panels.

8. An elevator shaft door disposed in a frame, the frame having a plurality of parallel tracks, comprising:

- a) a plurality of rolling carriages for rolling in said plurality of parallel tracks;
- b) a plurality of panels with each panel being coupled to and suspended from at least one of said plurality of rolling carriages;
- c) a plurality of deflection rollers that are mounted to rotate on at least one of said plurality of rolling carriages, wherein said plurality of deflection rollers are adapted to rotate around vertical axes of rotation; and
- d) at least one tension cable that is fixed in place, and has ends, wherein said tension cable ends are coupled to at least one rolling carriage of said plurality of rolling

carriages and wherein said tension cable is guided around said plurality of deflection rollers so that said plurality of panels perform opening and closing movement and move past each other with a changing overlap during said opening and closing movements on said plurality of parallel tracks.

9. The door as in claim 8, wherein said ends of said tension cable are connected to a back end of at least one of said plurality of rolling carriages oriented in the closing direction.